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LANGUAGE AND THE ASSOCIATIVE REFLEX

STUDENTS of epistemology have curiously neglected the study of language as the medium in which our more significant knowledge is retained and rendered effective. Recent developments in psychology, however, have rendered a restatement of the problem imperative. In particular, the problems treated by Mr. F. L. Wells[1] furnish suggestions that no philosopher can longer afford to neglect. If we take the fact that "a response primarily elicited by one class of objects becomes elicited by another class of objects associated with the first"[2] and combine it with the fact of "affective transference, by which the affect, originally attaching to some special experience, is *loaded* upon another perception or idea somehow associated with that original experience"[3] we surely have a basis upon which the fundamental facts of the use of language can be understood.

To take an obvious example, I associate certain inflections of the voice with certain emotional states, and the word "fire" with a certain experienced fact, then, upon hearing someone shout "fire!" I respond to the object and the emotional states of him who called. That is, a second class of objects, the words uttered and the inflections in which they are uttered, invoke a response from me that would normally be invoked by objects themselves. The thesis of this paper is, then, that words, spoken or written, are objects that have become so thoroughly associated with other objects or situations that, in the absence of them, they can evoke responses, both emotional and practical, which would be evoked by the things themselves. But since the example chosen may seem to be misleading, as specially selected for the case in question, and the thesis not applicable to articles, prepositions, conjunctions, and the elaborate technicalities of developed speech, it is necessary to work it out more fully in terms of the growth of language, and this shall be the task of this paper. Fortunately Professor Jespersen, in his noteworthy book, "Progress in Language,"[4] has furnished the material adequate to our purpose.[5]

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[1] This JOURNAL, Vol. XIII, pp. 354–6.

[2] *Loc. cit.*, p. 354.

[3] *Loc. cit.*, p. 355.

To seek the absolute beginnings of language is, of course, an impossible task, for in evolutionary history it is certainly not true that men arose and then learned to talk, but rather, in the course of development, animal noises became gradually transformed into articulate speech. And the language learning of children is not an adequate starting point, for in the child we have a being with maturing speech organs copying the behavior of those about him who already talk, while for primitive man, the acquisition of speech was a genuinely creative task. The speech of savages is, however, more illuminating, for it represents arrested, or at least retarded, development along lines that are probably not wholly without analogy to those along which more successful speech has passed.

Professor Jespersen's method is "to trace our modern nineteenth-century languages as far back in time as history and our materials will allow us; and then, from this comparison of present English with Old English or Anglo-Saxon, of Danish with Old Norse, and of both with 'Common Germanic,' of French and Italian with Latin, of modern Persian with Zend, of modern Indian dialects with Sanskrit, etc., to deduce definite laws for the development of languages in general, and to try and find a system of lines which can be lengthened backwards beyond the reach of history." It is interesting to note that the results of this method have been greatly strengthened by the recent work of anthropologists.[6]

The result[7] can be summarized as follows: (1) "We observe everywhere the tendency to make pronunciation more easy, so as to lessen the muscular effort; difficult combinations of sounds are discarded, those only being retained which are pronounced with ease." (2) "Ancient languages have several forms where modern languages content themselves with fewer; forms originally kept distinct are in course of time confused, either through a phonetic obliteration of differences in the endings, or through analogical extension of the functional sphere of one form." (3) "While our words are better adapted to express abstract things and to render concrete things with definite precision, they are comparatively colorless. The old words, on the contrary, spoke more immediately to the senses, they were manifestly more suggestive, more graphic and pictorial; while to express one single thing we are not unfrequently obliged to piece the image together bit by bit, the old concrete words would at once present it to the hearer's mind as an indissoluble whole." In other words "*the evolution of language shows a progressive tendency from inseparable irregular conglomerations to freely and regularly combinable short elements*" (p. 127).

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[4] Macmillan, 1894.

[5] *Cf.* Esp. Chs. V., IX.

[6] *Cf.* Marrett, "Anthropology," Ch. on "Language."

[7] Jespersen, *loc. cit.*, pp. 339–365.

So much for the facts. Our next problem is their interpretation. To begin with the concrete character of the vocabulary. If "the aborigines of Tasmania have a word for each variety of gum-tree, wattle-tree, etc., but no word for tree"; if "the Mohicans have words for cutting various objects, but none to convey *cutting* simply; and the Society Islanders can talk of a dog's tail, a sheep's tail, or a man's tail (?), but not of *tail* itself"; if "in Cherokee, instead of one word for 'washing' we find different words, according to what is washed,"[8] the suggestion is too strong to neglect that the word is originally a more or less complex sound that has become associated with certain things or situations and become a substitute for them in evoking responses. Hence the sound has taken upon itself the character of the word. It has become relatively the same thing to hear the word that it was to look on at the situation, or in some cases, to take part in it. We have in them cases of associative reflexes.

The fact of simplification of grammar is equally striking. Thus if words are not built up from roots, but roots "are abstractions of that which is common to a group of words which are *felt* as etymologically related," as Professor Jespersen believes (p. 114), as *sorrow* and *sorry* are felt to be related to one another although 1,000 years ago one belonged to the Old English *sorg,* "care," and the other to *sarig,* "wounded,"[9] grammatical structures must somehow have resulted from abstractive comparison of sentence words and served to reduce the tremendous vocabulary that so many independent terms would have compelled. In other words, we have a case of a simplification in the second class of objects which have become associated with the first and act as substitutes for them in evoking reactions. But there is also another consequence of this fact that we must not pass over.

Professor James, in his "Psychology," speaks of feelings accompanying the various prepositional parts of speech, such as a feeling of "of," a feeling of "by" and a feeling of "for," and many have found these feelings of an intangible character that is difficult to articulate. If the above suggestions as to the psychological origin of language is correct, however, this obscurity could be explained on the ground that *it is always a sentence and never a detached word that has psychological significance.*[10] The writer has always found that when the above prepositions are mentioned, he invariably completes them either by a number of particular instances in each case or by the indefinite form, "of," "by" or "for something." He doubts even if nouns themselves have independent significance; "tree" means "look at the tree"; "ocean," "swim in the ocean" or something of the sort.

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[8] Jespersen, *loc. cit.*, pp. 350–1; Marrett, *loc. cit.,* gives many other examples.

[9] *Loc. cit.,* p. 115.

[10] "It seems fairly evident that the selection of such simple terms must

Finally, the phonetic simplification is nothing but a special case of the simplification in movement as any acquired mode of action becomes habit.[11] Why particular sounds came to represent the situations they do, is, for the most part, beyond the scope of our knowledge, although there is doubtless some truth in the "bow-wow" and "pooh-pooh," if not in the "ding-dong," theories of the origin of speech. Sounds made on the inspired, instead of the expired breath which still exist in some savage communities, and the pitch accent, which was characteristic of ancient Greek, are sufficiently difficult to account for their disappearance, and the speech of the uncultivated illustrates a further simplification in our day.

And this suggests one further thought. Without involving the controversy concerning "imageless thought," one can recognize that the larger part of thinking takes place in the form of the repetition of sentences. In this repetition, however, a further simplification has taken place, for the sentence no longer has to be uttered, and when the procedure is rapid, the words are not even fully articulated. But is not this a continuation of the same process, and may it not be that the physiological procedure of thinking is nothing but a simplified process of articulating words or sentences and responding to them by articulating more words or sentences until finally those occur which represent, in the associative reflex, a situation demanding some other sort of response such as an overt action? Knowledge would then be nothing but a preparation of reflex connections between this secondary class of objective responses such that, given a certain situation, the right reflexes would take place to precipitate suitable action as their final outcome when the "train of thought" preceding the action had been brought to an end.[12]

Such a state of things, of course, supports the instrumental theory of knowledge, and for this sort of thinking, at least, the problem of images disappears and the question of the resemblance of images to their objects is almost meaningless, for the image is

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to a certain extent depend upon the chief interests of a people; and where it is necessary to distinguish a certain phenomenon in many aspects, which in the life of the people play each an entirely independent rôle, many independent words may develop, while in other cases modifications of a single term may suffice." (Boas, "Handbook of American Indian Languages," p. 26.)

[11] Boas, *loc. cit.*, p. 28.

[12] *Cf.* Watson, "Behavior," Section on Language.

merely the word, and words stand for objects, not from any resemblance, but because they have become established as objects which not only take their place in eliciting practical responses, but also because on them are "loaded" all of the affective states which originally were awakened by the situation in question. They are genuine cases of the union of "*Übertragung*" and the conditioned reflex.

HAROLD CHAPMAN BROWN

LELAND STANFORD UNIVERSITY.

A FURTHER WORD ON BLACK

PROFESSOR WARD is naturally disappointed that his arguments against the sensory character of black failed, for some ten years, to call forth a reply. He is disappointed that the reply, when it appears, comes at second hand; his present paper[1] is nominally concerned with myself, but his thought is still with Hering. He is further disappointed that my reply deals with only a part of his discussion, and that I rest my case rather upon psychological observation than upon psychophysical theory. I wish that I could relieve this disappointment; I wish very much that Hering or Stumpf or G. E. Müller would comment on Ward's objections. Meantime I can not, for reasons already given, enter more extensively into the questions he has raised. They are, so far as I can see,—and I hope that the difference of opinion may be thus expressed without discourtesy,—irrelevant to the main issue: is black a sensation? All that I now attempt, therefore, is to meet the points that Ward makes in direct rejoinder to my criticism.

1. Black, Ward says, can not be a sensation because "experience can not begin with negation and vision can not begin with black"; "my point, in short, is the obvious one that the experience of darkness presupposes the experience of light and answers to its absence." The "negation," as I need hardly repeat, is the very thing to be proved; and so long as it is not proved the argument is powerless. For suppose (Ward is not averse from hypothetical cases) that our own vision began with black and white, and that blue and yellow were added some years later, and red and green later still. Here we should have both chronological order and physiological dependence; and would red and green cease on that account to be sensations? We need not, however, stretch our imagination so far. Why should not an eye, capable of black-white vision in daylight, open for the first time upon a black, upon a patch of burned-over grass or the mouth

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[1] "A Further Note on the Sensory Character of Black," *Brit. Jour. Psych.*, Vol. VIII., 1916, pp. 212 ff.